

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (original): Weldable component of structural steel, characterized in that its chemical composition comprises, by weight:

$$\begin{aligned}0.40\% &\leq C \leq 0.50\% \\0.50\% &\leq Si \leq 1.50\% \\0\% &\leq Mn \leq 3\% \\0\% &\leq Ni \leq 5\% \\0\% &\leq Cr \leq 4\% \\0\% &\leq Cu \leq 1\% \\0\% &\leq Mo + W/2 \leq 1.5\% \\0.0005\% &\leq B \leq 0.010\% \\N &\leq 0.025\% \\Al &\leq 0.9\% \\Si + Al &\leq 2.0\%\end{aligned}$$

optionally at least one element selected from V, Nb, Ta, S and Ca, at contents of less than 0.3%, and/or from Ti and Zr at contents of less than or equal to 0.5%, the remainder being iron and impurities resulting from the production operation, the contents of aluminium, boron, titanium and nitrogen, expressed in thousandths of %, of the composition also satisfying the following relationship:

$$B \geq \frac{1}{3} \times K + 0,5, \quad (1)$$

with $K = \text{Min}(I^* ; J^*)$

$I^* = \text{Max}(0 ; I)$ and $J^* = \text{Max}(0 ; J)$

$I = \text{Min}(N ; N - 0,29(Ti - 5))$

$$J = \text{Min} \left(N ; 0,5 \left(N - 0,52 \text{ Al} + \sqrt{(N - 0,52 \text{ Al})^2 + 283} \right) \right),$$

and whose structure is bainitic, martensitic or martensitic-bainitic and also comprises from 3 to 20% of residual austenite.

2. (original): Steel component according to claim 1, characterized in that its chemical composition also satisfies the following relationship:

$$1.1\% \text{Mn} + 0.7\% \text{Ni} + 0.6\% \text{Cr} + 1.5(\% \text{Mo} + \% \text{W}/2) \geq 1 \quad (2)$$

3. (original): Steel component according to claim 2, characterized also in that its chemical composition satisfies the following relationship:

$$1.1\% \text{Mn} + 0.7\% \text{Ni} + 0.6\% \text{Cr} + 1.5(\% \text{Mo} + \% \text{W}/2) \geq 2 \quad (2)$$

4. (currently amended): Steel component according to claim 1, ~~any one of claims 1 to 3~~, characterized in that its chemical composition also satisfies the following relationship:

$$\% \text{Cr} + 3(\% \text{Mo} + \% \text{W}/2) \geq 1.8.$$

5. (original): Steel component according to claim 4, characterized in that its chemical composition also satisfies the following relationship:

$$\% \text{Cr} + 3(\% \text{Mo} + \% \text{W}/2) \geq 2.0.$$

6. (currently amended): Method for manufacturing a weldable steel component according to claim 1, ~~any one of claims 1 to 5~~, characterized in that

- the component is austenitized by heating at a temperature of from A_{c3} to 1000°C , and it is then cooled to a temperature of less than or equal to 200°C , in such a manner that, at the core of the component, the rate of cooling between 800°C and 500°C is greater than or equal to the critical bainitic velocity,

- optionally, tempering is effected at a temperature of less than or equal to A_{c1} .

7. (original): Method according to claim 6, characterized in that, at the core of the component, the cooling rate between 500°C and a temperature of less than or equal to 200°C is from 0.07°C/s to 5°C/s .

8. (currently amended): Method according to claim 6, ~~claim 6 or 7~~, characterized in that tempering is effected at a temperature of less than 300°C for a period of time of less

than 10 hours, at the end of the cooling operation to a temperature of less than or equal to 200°C.

9. (currently amended): Method according to claim 6, ~~claim 6 or 7~~, characterized in that no tempering is carried out at the end of the cooling operation to a temperature of less than or equal to 200°C.

10. (original): Method for manufacturing a weldable steel plate according to any one of claims 1 to 5, the thickness of which is from 3 mm to 150 mm, characterized in that the plate is quenched, the cooling rate V_R at the core of the component between 800°C and 500°C and the composition of the steel being such that:

$$1.1\% \text{Mn} + 0.7\% \text{Ni} + 0.6\% \text{Cr} + 1.5(\% \text{Mo} + \% \text{W}/2) + \log V_R \geq 5.5.$$

11. (original): Method for manufacturing a weldable steel plate according to claim 10, the thickness of which is from 3 mm to 150 mm, characterized, in addition, in that the plate is quenched, the cooling rate V_R at the core of the component between 800°C and 500°C and the composition of the steel being such that:

$$1.1\% \text{Mn} + 0.7\% \text{Ni} + 0.6\% \text{Cr} + 1.5(\% \text{Mo} + \% \text{W}/2) + \log V_R \geq 6.$$